

ART. VI.—*Janirella*, a New Genus of Isopoda from
Fresh-water, Victoria.

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(Plates XVIII. and XIX.)

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The Isopod here described I collected from a small fresh-water pool at Thorpdale, Gippsland, at the same time and place that I took *Phreatoicoides gracilis* and *Niphargus pulchellus*. In my two papers describing these forms¹ I mentioned the locality in some detail. The present species was an inhabitant of the same little pool as *N. pulchellus*.

It is a normal member of the family Janiridae as defined by Sars in 1897,² except in being blind, and in this respect it agrees with the Isopod and Amphipod mentioned above. It is also remarkable as having a fresh-water habit. Sars, in his remarks on the family, says that, "all the known forms are exclusively marine, and, as it were, replace the Asellidae in the oceans"; but I might point out that *Jaera guernei*, Dollfus (the genus being undoubtedly of this family) had previously been recorded as an inland river species of the Azores.³

It seems necessary to form a new genus for the present species, and, because of its possessing many characters in affinity with both *Janira* and *Janiropsis*, I propose to name it *Janirella*.

Janirella, n. g.

General Characters.—General form of female that of *Janira*; the male is smaller, with each segment wider, or at least as wide, as the preceding one; in other respects, except in the pleopodos, similar in form in both sexes. Caudal segment large, as long, or longer, than broad, rounded distally. Segments of peraeon with lateral margins not lacinate. Superior antennae small, with flagellum rudimentary. Inferior antennae very much elongated,

¹ Proc. Royal Society Victoria, vol. xii., pp. 122 and 152.

² Sars, Crustacea of Norway, ii., pts. 5, 6, p. 98.

³ Stebbing, History Crust. 1893, Int. Sc. Series lxxiv., p. 379.

with a well marked cylindrical appendage outside the third joint of peduncle. First maxillae with outer lobe tipped with stout pectinated spines. Second maxillae with outer twin lobes tipped with finely pectinated setae. Maxillipeds normal, second and third joints of "palp" not greatly expanded. Legs simple, biunguiculate, ambulatory, similar to each other in form. Uropods largely developed, cylindrical; outer ramus much shorter than inner one. Pleopods normal; operculum of female large; middle piece of male operculum slightly, or not at all, dilated at tip.

Remarks.—This genus unites in a measure the characters of *Janira* and *Janiropsis* as defined by Sars;¹ as well as possessing characters dissimilar from each.

From *Janira* it differs:—(1) The superior antennae are not composed of "numerous short articulations." (2) The second pair of maxillae have the outer lobes tipped with pectinated, not "simple setae." (3) The first pair of legs have not the carpus large and strongly prehensile. (4) The dactyli of the legs are not 3-unguiculate.

From *Janiropsis* it differs:—(1) The maxillipeds have not the "second and third joints of the palp very much expanded." (2) The first pair of legs of the male are not "remarkably developed, prehensile, much longer than any of the other pairs, with the carpal joint fusiformly developed." (3) The middle piece of the male operculum is not "remarkably dilated at the tip." (4) The uropoda are not "much shorter" than those of *Janira*.

It is peculiarly characteristic in: (1) The form of the male, (2) The legs are subequal and similar in form in both sexes. The dactyli, although biunguiculate, as in *Janiropsis* terminate in a long simple unguis, near which is a small lateral one. (3) The caudal segment is very large. (4) The uropoda are cylindrical and have the outer ramus very short.

Janirella pusilla, n. sp.

Specific Character.—*Female.* (Fig. 1) Body oblong-oval, three times longer than broad, outer margins of all segments except front of cephalon fringed with short stout spinules—

¹ *Loc. cit.*

Cephalon small, transversely suboblong, subequal in length to succeeding segments, anterior margin slightly obtusely produced in the middle. Segments of peraeon with lateral margins evenly rounded. Coxal plates inconspicuous—Caudal segment large, subovoidal, longer than its greatest breadth, as long as the four preceding segments combined, posterior margin between the uropods slightly produced and evenly rounded. Eyes not formed. Superior antennae not reaching to the end of the penultimate peduncular joint of the inferior ones, flagellum composed of about four joints. Inferior antennae exceeding the length of the body, flagellum more than twice the length of the peduncle and composed of about 38 articuli; appendage outside third joint of peduncle cylindrical, prominent. Legs slender, increasing in length posteriorly. Operculum completely covering caudal segment. Uropods narrow, long, subequal in length to caudal segment, outer ramus small, about one-third the length of inner ramus, inner ramus twice the length of peduncle.

Male.—(Fig. 2) Body narrow—elliptical, narrowest anteriorly, two and a quarter times longer than its greatest breadth. Caudal segment very large, sub-spherical. Middle piece of operculum with the end triangularly cleft mesially, and on each side of this cleft margin slightly concave; lateral distal angles slightly produced, bilobate. Similar in other respects of form to female.

Colour.—Pale ochreous, without markings. Spirit specimens pale yellow.

Length.—♂ 3 mm. ♀ 3.5 mm.

Habitat.—Fresh-water pool, Thorpdale, Victoria.

DETAILED DESCRIPTION.

An external examination was made of eleven specimens composed of males and females, and some of the latter had developing young in the marsupium. The largest female measured 3.5 mm. and the largest male 3 mm. One of each sex was dissected, which I shall now describe in some detail.

FEMALE.

Body (Fig. 1).—The body is oblong-oval in form, three times as long as it is broad, and slightly narrowed both in front and behind. The greatest breadth is at the third and fourth segments

of the peraeon. The lateral margins of the cephalon and each succeeding segment is fringed by a row of short stiff spinules. The *Cephalon* is small, transversely suboval, subequal in length to the succeeding segment, with the anterior margin slightly produced and bluntly rounded between the antennae. The lateral margins are slightly expanded. The *Eyes* are not formed nor is there any appearance of lenses nor pigment, but in some specimens there is a very slight appearance of two round areas, indicated by somewhat lighter colour, where the eyes would normally be, but it is doubtful if these are vestigial remnants of former functioning eyes. The *Peraeon* (mesosome) has the seven segments each clearly defined, slightly dorso-ventrally arched, and the lateral margins of each are simple, bluntly rounded, and cover the coxa of the appendages. The *Pleon* (or metasome) is of normal form, very large, longer than its greatest breadth, and as long as the four preceding segments combined. The posterior margin between the uropods is very slightly produced and rounded. The lateral and posterior margins are entire and fringed with short spinules.

Superior Antennae (Fig. 1).—The superior antennae reach somewhat beyond the middle of the fifth joint of the inferior antennae. The basal joint is very stout, the second and third much narrower, and the remaining portion—the flagellum—is composed of three or four joints. The distinction between flagellum and peduncle is, however, not clearly marked. The terminal joint is richly tipped by so called “olfactory” and feathered “auditory” sensory setae; occasionally also from other parts arises a feathered sensory seta.

Inferior Antennae (Fig. 3).—The inferior antennae measures as long as the body and uropods combined. It is fixed under the arched frontal margin of the cephalon. The peduncle, which is composed of six joints, is about twice the length of the superior antennae; the first joint is subquadrate, the second transverse, the third as long as the first two combined, and mesially, from the outer margin, arises a well marked cylindrical appendage, tipped by long setae. The fourth joint is short and turned obliquely outwards; the fifth is slightly longer than the first four combined, and, close to its attachment to the fourth joint, the outer margin is slightly produced to form, in optical section, an

obtuse angle. The sixth is longer than the fifth. The setae are few and unimportant. The flagellum is formed of about 38 joints.

Upper Lip (Fig. 4).—The upper lip is short, the margin evenly rounded, and distally clothed with a fur of fine setae.

Mandibles (Fig. 5).—The mandibles differ from each other in the cutting edge and spine row. The *left* has two rows of cutting teeth, each of which has six teeth, and a spine row composed of ten serrated spines. The *right* has only one cutting edge, composed of five teeth, and a spine row of thirteen serrated spines. In other respects they are similar to each other. The molar tubercle is normal. The *palp* is composed of three joints, the first two extend to the level of the cutting edge, and are subequal in form, the second being slightly the longest, and bears distally on its lower margin a row of six spatulate setae, with the margins delicately feathered; the two at each end of the row are twice the length of the others. The terminal joint is of similar length to the first joint, slightly curved downwards, with the end rounded, and bearing three plumose setae, and between them and the distal extremity of the second joint the lower margin has six short, stout, plumose setae.

Lower Lip (Fig. 6).—The lower lip is large and formed of two lobes, broadly rounded, with their summits and inner distal margins fringed with fine long incurving setae.

First Maxillae (Fig. 7).—The first maxillae are each composed of two lobes of normal form; the outer one is broad, its outer margin more than usually convex, and bears on its summit about twelve stout pectinated spines; the inner lobe is narrow, and reaches to the extremity of the outer lobe; its bluntly rounded extremity is thickly covered with long simple setae.

Second Maxillae (Fig. 8).—The second maxillae are of usual shape. Each consists of a broad basal portion with the inner distal extremity produced into a lobe, which has the inner margin and extremity fringed with long, filamentous, simple setae. Outside this lobe are two narrow lobes (Fig. 8a) similar to each other, which extend almost to the end of the inner lobe; they articulate with the basal portion of the summit, and each is tipped by a few very long, finely-pectinated setae.

Maxillipeds (Fig. 9).—The maxillipeds are almost identical with those of *Janira maculosa*, Leach, but the epipodite (or epignath) has not the outer edge angular in the middle, but rather concave. As in that species, the second and third joints of the “palp” are not much expanded, in contrast to *Janiropsis*, in which they are very broad.

Peraeopods.—The peraeopods are rather long, subequal in form, and each succeeding pair slightly increases in length. Fig. 10 illustrates the first, and Fig. 12 the last pair. A description of the first will suffice for the remainder, except in respect of the setae and spines. The first pair may be, but if so it is very feebly prehensile, for the carpus is not specially developed nor differs from the succeeding pair, as in *Janira*. On the postero-distal angle of the propodos, and also the carpus, there are one or more plumose sensory setae, and along the inner margin of the propodos there is a row of six stout spines of curious shape (Fig. 11). These are rather broad at the base, but narrow to an acute end; at about half their length, on the outer side, there arises a fine filament or seta which curves outward somewhat, and extends as far as the end of the spine. The dactylos is long, about one-third the length of the propodos, slightly curved, and terminates in a large single unguis, and on the inner margin, at its base, there is a short secondary unguis. The remaining joints are subequal in form to *Janira* and other allied genera.

Pleopods.—The pleopods are of normal form. The operculum is as large as the caudal segment, and covers the whole of its ventral surface. The others require no particular description, a reference to (Figs. 14, 15 and 16) will sufficiently explain them.

Uropods.—The form of the uropods has been sufficiently explained in the specific description. There are short scattered setae on the peduncles, but the rami are almost bare except on the rounded extremities, from each of which springs a tuft of very long setae

MALE.

Fig. 2 illustrates a small male of 2.5mm. length but is similar in form to one examined of 3mm. which was the largest obtained. The shape of the cephalon and succeeding four segments is similar to those of the female, but the remaining segments,

instead of gradually becoming narrower, gradually become wider, the caudal segment also participating in a greater width in like degree. The shape of each segment, except in relation to size, is identical with those of the female, the caudal segment however is relatively broader, and consequently subspherical instead of ovoidal in shape.

The only other observed difference from the female is in the pleopods, which are similar in general form to those of *Janira*. The middle piece of the operculum has each outer distal angle slightly produced and bilobate, and the ends of each lobe fringed with setae. The extremity has a triangular cleft in the middle, and the angles thus formed are distally fringed with a row of setae; the margins on each side between these angles and the outer angles are slightly concave and free from setae.

DESCRIPTION OF PLATES XVIII. AND XIX.

- Fig. 1.—Dorsal view of female of *Janirella pusilla* $\times 22$.
 „ 2.—Dorsal view of male of *Janirella pusilla* $\times 22$.
 „ 3.—Portion of inferior antenna $\times 66$.
 „ 4.—Upper lip $\times 66$
 „ 5.—Mandible of left side $\times 160$.
 „ 6.—Lower lip $\times 66$.
 „ 7.—First maxilla $\times 160$.
 „ 8.—Second maxilla $\times 66$. (a). Extremity of outer lobe
 $\times 160$.
 „ 9.—Maxilliped $\times 66$. (a). Plate of basos $\times 160$.
 „ 10.—First leg of right-hand side $\times 42$.
 „ 11.—Extremity of first leg $\times 200$. (a). Spine from margin
 of propodos $\times 390$.
 „ 12.—Portion of last leg $\times 42$.
 „ 13.—Middle piece of male operculum, outside view $\times 28$.
 „ 14.—Third pleopod $\times 33$.
 „ 15.—Fourth pleopod $\times 33$.
 „ 16.—Fifth pleopod $\times 33$.